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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,909	12/20/2000	Vij Rajarajan	2670	8972

7590 06/21/2004

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EXAMINER

PALADINI, ALBERT WILLIAM

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/742,909	Applicant(s) RAJARAJAN ET AL.	
	Examiner Albert W Paladini	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/10/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting elements and essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary elements and structural connections. See MPEP § 2172.01.

Claim 1

The claim is an apparatus claim, which cites a single apparatus, viz. "a computer-readable medium." An apparatus claim contains elements, which are structurally and or functionally interconnected. The claim then lists a series of steps, which appear to be performed by only the "computer-readable medium." The claim is not an apparatus claim since it does not contain interactive elements. It appears to be written as a method claim performed by the computer-readable medium." However, the logic of the methodology is not clear. It is not understood what is meant by a "modeling element" or how a "computer-readable medium" can provide the modeling element. A model can be in mathematical form, computer program form, physical form, verbally descriptive form, etc., but it is not understood how the "computer-readable medium" provides any one of these forms. Also, the "modeling elements" are not portions of an apparatus which interconnects with the first apparatus or the "computer-readable

medium," since the "computer-readable medium" appears to produce them. Lines 4-5 recite "modeling elements being adapted for negotiating connectability to one another." It is not understood how a model, as normally defined, can negotiate connectability. In addition, this is in method format and does not further limit the apparatus. With respect to lines 6-7, the "negotiation" also appears to be a method step, and in addition, it is not understood what element has the capability of negotiation.

Although the specification is a dictionary for the claims, and the Applicant is entitled to be his/her own lexicographer, each claim must be written so as to be self consistent and complete so that it is understood how all of the elements work cooperatively to perform a desired function in the case of a functionally operating invention. Thus, even though "modeling element" takes on a specific meaning in the specification, its function in the claim is not understood. It is clearly not an element, which interacts with others elements such as the "computer-readable medium," since it is produced by the "computer-readable medium."

Claim 22

The preamble recites a "computerized modeling system" which would be understood to mean a system, which can produce a model. Thus it must consist of elements, which interact together to produce models. The recitation of "a first modeling element" is unclear in this context. A "modeling element" might be a model generated by the "computerized modeling system." It is not understood how a model has a "first communication system. It is thus not understood how the first and second model

elements can be configured to negotiate through communication systems to have connections to other models. The claim also recites a "surface," but it is not understood how the surface connects with or interacts with the "modeling elements." From the Microsoft Computer Dictionary a ***system is an assembly of component parts linked together by some form of regulated interaction into an organized whole.*** Here again, the use of the term "model element" in the context of interactive hardware tends to obfuscate the meaning.

Although the specification provides a dictionary for the claims, and the claims may be broader than the specification; each claim must be complete and self consistent in itself. For a structural claim, the recitation must describe clearly how all the elements are physically connected together. For a functional claim, the recitation must describe clearly how the elements are physically connected together, and in addition, the sequential logical operation of the element working cooperatively together must be understood. For a method claim, the recitation must describe a sequential operation where each step further limits the previous step. In addition, even though the method claim is procedural, each step must be supported with sufficient physical means for accomplishing the step.

Appropriate correction and clarification are required.

3. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

Claim 32

It is not understood how a "modeling element" in line 3 can be "adapted for negotiating compatibility" to another "modeling element." A "modeling element" is inferred to be a set of software that contains a model of a real world system or configuration. It is not a hardware element that talks to another hardware element.

Lines 5-6 recite "negotiating connectability between the first and second modeling elements." Since the recitation in lines 2-3 state that the modeling elements negotiate connectability, either the step in lines 5-6 is unnecessary or there must be at least one other step, which initiates these elements to perform the function recited in lines 5-6. However, it is still not understood how a "modeling element" is capable of "negotiating connectability."

Although the specification provides a dictionary for the claims, and the claims may be broader than the specification; each claim must be complete and self consistent in itself. For a structural claim, the recitation must describe clearly how all the elements are physically connected together. For a functional claim, the recitation must describe clearly how the elements are physically connected together, and in addition, the sequential logical operation of the element working cooperatively together must be understood. For a method claim, the recitation must describe a sequential operation where each step further limits the previous step. In addition, even though the method claim is procedural, each step must be supported with sufficient physical means for accomplishing the step.

Appropriate correction and clarification are required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Gibson (6069634).

This rejection is made to the extent that the claims are understood by addressing elements recited and by inferring how they might operate in a functionally interactive manner, which supports the gleaned objective of the invention.

Gibson discloses a system for developing a model of volumetric object deformation where the model of the object is broken into sub-models elements , and each element model is stored in a computer readable medium. Gibson states on lines 43-57 in column 3 "In order to solve the problem of efficient deformation of objects, a voxel-based system for rapidly deforming volumetric objects performs simple deformation calculations for each element of the graphical object to be deformed such that when the object is manipulated, the object stretches or contracts through the movement of a selected element, followed by movement of neighboring elements only if a maximum or minimum preset distance is exceeded between the moved element and its neighbor. Thus elements are moved only if they need to be, which eliminates calculating movements of elements not affected by movement of the selected element. This in turn allows fast propagation of the deformation through the volume represented by the object to be deformed, with the motion constraints being similar to the motion provided by a set of linked elements in a chain." Thus, the elements are connected to provide a complete volumetric model where a change or deformation of any modeling element is negotiated with or transferred to adjacent modeling elements.

Relevant Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kaihara (5130932) discloses a production system simulator which comprises: a production system model input section which inputs, edits and stores the data on individual processes, their locations and their connecting relations in an interactive mode by using the symbols expressing individual processes in a simulation object production system, and also inputs, edits, stores and outputs the data on the attribute data corresponding to individual processes and the attribute data on the production system; a modularization library storage section for storing simulator element module groups described with a widely used simulation language; and a production system simulator generating section which reads simulator element modules corresponding to the input data to the production system model input section from the modularization library storage section, and at the same time it automatically performs the allocation of the attribute data and the numbers of variables and creates and outputs a production system simulator source program; therefore it is made possible to input parameters in an interactive mode using graphic symbols with the production system model input section.

Gryphon (6233537) discloses a modeling system for the visual presentation of event-driven business processes, composed of multiple plan elements, is provided. The modeling system consists of a modeling language using a small set of defined pictograms (symbols) capable of representing elements of the process in progressively finer levels of detail. Each element primitive, be it a connection element, control element, business information element, or

business process element, is independently adjustable. Each element can be modified or enhanced without damage to the overall process because each element represents a delegation of a task primitive (including data storage) and the abstraction models are loosely coupled. All of the other connected primitives are aware simply of what is passed into or taken out of a neighbor primitive, not how that primitive accomplishes its task.

Dalal (6363404) discloses a method and system for producing three dimensional model which contains a markup document which may include user-interface elements, such as various types of link elements. The processor generates a three-dimensional model for display on a display device based on predefined three-dimensional model information, predefined viewpoint information and the texture image files. The texture image files and, thus, the markup documents are mapped to predetermined locations on the predefined three-dimensional model. The displayed markup documents may include user-interface elements that may be hyperlinked to another document, file or script.

Pfister (6448968) discloses a method for modeling a representation of a graphic object containing surface elements where a surface of the object is partitioned into a plurality of cells having a grid resolution related to an image plane resolution. A single zero-dimensional surface element in the memory for each cell located on the surface of the object. The surface elements in adjacent cells are connected by links. Attributes of the portion of the object contained in the cell are assigned to each surface element and each link. The attributes associated with each surface element are projected to the image plane.

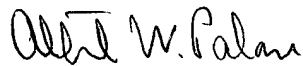
Harrison (6611725) discloses a computer-implemented method for processing a drawing document generated by a computer aided design system. The drawing document includes image elements (e.g., vector drawing data) that can be rendered to display a 2D projected view of a 3D model and tag data associating each image element with components of the design model (with at least two of the components referenced by the tag data being specified in separately stored data documents). The method includes processing the drawing document to display the view of a design model on a computer display terminal, receiving a user input selecting one of the image elements, receiving supplementary data, and linking the supplementary data to one of the model components based on the tag data associating the selected image element with the first model component.

7. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (703) 308-2005. The examiner can normally be reached from 7:30 to 3:30 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (703) 308-0538. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

June 17, 2004


Albert W. Paladini
Primary Examiner
Art Unit 2125